

## **WILDLAND AND PRESCRIBED FIRE MONITORING**

### **PROGRAM REQUIREMENTS**

Each unit intending to implement wildland fire use and prescribed fire must have an approved fire management plan. In order to evaluate resource management and fire management objectives, units must monitor the effects of fire. A Fire Monitoring Plan has been designed and evaluated and is now a requirement to supplement the fire use program. Fire Monitoring Plans can be prepared independent of the Fire Management Plan and attached as an Appendix at a later time.

Four monitoring levels are recognized and parks must identify each of these in the plan. These levels include environmental planning, fire observations, immediate postfire effects, and long-term change. These four levels are cumulative and must be linked to each other.

### **A. FIRE MONITORING PLAN**

All NPS units applying wildland fire use and/or prescribed fire to accomplish resource benefits must prepare a Fire Monitoring Plan. This plan should be appended to the Fire Management Plan. Monitoring is a critical component of fire management and the Fire Monitoring Plan is important to identify why monitoring will be done, what will be monitored, how it will be monitored, where it will be done, and how often it will be completed.

A suggested outline for Fire Monitoring Plans includes the following essential elements:

- I. Title page with appropriate signatures
- II. Introduction
  - A. Description of vegetation communities and relationship to fire
  - B. Identify need for study and management conflicts and choices made or assumed.
- III. Description of ecological model
  - A. Species found in each vegetative community
  - B. Life history, phenology, reproductive biology, causes of distribution, habitat characteristics, management conflicts or needs, and effects of other resource uses on the species (ie. herbivory of flower heads by cattle).
  - C. The model should describe known biology (based on natural history observations) and conjectural relationships and functions.

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- D. Sources of information and relationships that are hypothesized should be identified.
  - E. The purpose of this section is to help identify the sensitive attribute to measure and to describe some of the relationships between species biology and management activities.
  - F. This section is the biological basis for the development of objectives.
- IV. Management Objectives
- A. Resource Management Goal for Prescribed Fire
  - B. Prescribed Fire Objectives
  - C. Includes rationale for the choice of attribute to measure and the amount of change or target population size.
- V. Monitoring Design
- A. Monitoring Objectives - Rationale for precision required
  - B. Sampling Design - Describe methods clearly. Sampling unit size, placement in field, rejection criteria, use of control plots, and how many plots will be installed.
  - C. Field measurement - Unit counted? How are plots marked? Information for someone to follow behind
  - D. Timing of monitoring - What time of year, both calendar and phenologically? How often?
  - E. Monitoring location - Clear directions, maps, aerial photos describing how to get there.
  - F. Prescribed Fire Monitoring Parameters
    - 1. Level 1 variables to be monitored
    - 2. Level 2 variables to be monitored
  - G. Intended data analysis approach.
- VI. Monitoring Implementation Schedule
- A. Burn Unit Schedule - 5 years out - minimum
  - B. Plot Establishment
  - C. Pre-burn Sampling
  - D. Post-burn Sampling
- VII. Data sheet examples
- VIII. Responsible party
- IX. Funding needs assessment
- X. Management implications of potential results

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- XI. References
- XII. Consultation and Coordination
- XIII. Reviewers
- XIV. Appendix
  - A. Plant specimen voucher collection/plant list
  - B. Vegetation Map
  - C. Fire Management Unit Map
  - D. Fuel Model Map
  - E. Plot Location Map